

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/714,887)
In re application of: HEARD, Jacqueline E. *et al.*)
Filing Date: 11/13/2003)
Art Unit: 1638)
Examiner: KRUSE, David H.)
Docket No. MBI-0058CIP)
Customer No. 47550)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132 OF OLIVER RATCLIFFE

I, Oliver J. Ratcliffe, declare:

1. I received my Bachelor of Arts degree in Genetics from Cambridge University and my doctoral degree in Biological Sciences from the John Innes Centre at the University of East Anglia, Norwich, United Kingdom. I joined Mendel Biotechnology in June 1999 and have served as Director of Research since January of 2004 and Vice-President of Research since December of 2005. In this declaration, I serve as an expert witness in that my work has involved the isolation and characterization of plant genes and the use of cloned genes to modify a variety of traits in genetically transformed plants, specifically in the areas of plant developmental biology, the genetic control of flowering, and regulation of environmental stress responses in plants. I have directed research in the area of environmental stress tolerance of plants overexpressing sequences of the present invention, and I am therefore familiar with the present invention. This declaration is being drafted as part of my normal duties to support research and intellectual property at Mendel Biotechnology, Inc. As compensation for employment at Mendel Biotechnology, I receive salary, benefits and stock options.

2. This application relates to compositions and methods for modifying a plant's traits. The compositions include plants comprising polynucleotides that encode novel plant transcription factor polypeptides first identified in *Arabidopsis thaliana*, a plant used experimentally as a model plant species. The methods include using the polynucleotides and their encoded polypeptides to modify a trait in a transgenic plant, such as the tolerance of a plant to an environmental stress, including water deficit.

3. For the purposes of this declaration, a plant "line" means the progeny (through seed or vegetative propagation) of a transformation event or a newly bred variety (specific genotype).
4. I understand that the Examiner has rejected claims in the present application for allegedly failing to describe the claimed transgenic plants, or failing to enable another to make the transgenic plants, where the plants comprise a recombinant polynucleotide encoding a polypeptide that is similar to SEQ ID NO: 4, such plants having greater tolerance than a control plant to an environmental stress such as water deficit.
5. I herewith submit experimental results obtained by overexpressing two sequences, G3810, SEQ ID NO: 212, and G3811, SEQ ID NO: 214, that are closely related to the G922 polypeptide sequence, SEQ ID NO: 4. G3810 and G3811 were found by the method described in the specification using the BLASTp program with default parameters of the BLOSUM62 scoring matrix. These sequences were each overexpressed in *Arabidopsis thaliana* using transformation methods described in the present application and known in the art.

Severe water deprivation assays were conducted with 35S::G3810 and 35S::G3811 plant lines. Seedlings of these lines were grown for 14 days on MS+ Vitamins + 1% sucrose at 22° C. Plates were opened in the sterile hood for 3 hr for hardening and then seedlings were removed from the media and dried for two hours in the hood. After this time they were transferred back to plates and incubated at 22° C for recovery. Plants were visually evaluated after 5 days.

To date, three of ten 35S::G3810 plant lines conferred increased tolerance to water deficit in transgenic plants, as compared to control plants.

To date, two of ten 35S::G3811 plant lines conferred increased tolerance to water deficit in transgenic plants, as compared to control plants.

6. I hereby declare that all statements made herein are true and that they are based on my own knowledge, information and belief. These statements are made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issued from it.

Date: February 10, 2009



Oliver J. Ratcliffe, Ph.D.
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